dation is considerable, more or less complete depletion of the vascular system invariably occurs. This is a secondary result of the obstruction of the *tubuli uriniferi.*

3. The oleo-albuminous exudation occurs in two chief forms; viz. *first*, Universal infiltration of the tubes throughout the organ; and *second*, Infiltration of particular sets of tubules, the rest remaining free, or nearly so. In the latter mode arise the granulations of Bright.

4. There is no essential anatomical difference between the exudations in the kidney which are the result of chronic processes, and those which have been considered as the result of inflammation.

5. The capillary vessels of the kidney are subject to spontaneous obliteration (unaccompanied in the first instance by any visible lesion of the tubes), giving rise to the peculiar affection which I have called the *waxy degeneration.* This obliteration of the vessels is probably in all cases preceded by a stage of congestion.

6. The consequence of the waxy degeneration is thickening and varicose dilatation of the tubuli throughout the organ.

7. The tubes of the kidney are subject to contraction and obliteration, in consequence of the desquamation of their epithelium; a condition resulting in atrophy, and complete disorganization of the organ.

8. The desquamation of the epithelium occurs very frequently in all the other diseased conditions of the kidney. When sufficiently long-continued and extensive, it produces contraction, and this indifferently whether exudation be present or not. It is sometimes accompanied by vascular congestion in every stage of its progress.

9. The earlier stages of the exudations can only be discovered by means of the microscope. The progress of the waxy degeneration, on the contrary, is best traced by the unaided eye. The desquamation of the epithelium is only to be discovered with certainty by means of the microscope, and is particularly apt to escape attention, under all circumstances, if the *kidney* only, and not the *urine*, be looked to. It results that careful investigation, both by the microscope and the naked eye, both of the kidney after death and the urine during life, are indispensable to enable the pathologist to determine with exactitude the presence or absence of disease.

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21. *Diseased Condition of the Tracheo-bronchial Mucous Membrane of the Artisans of Sheffield, and the Statistics of Mortality among them.*—Dr. Craigie, in the late edition of his elements of "*General and Pathological Anatomy*," states: In the town and vicinity of Sheffield, two sorts of grinding of edged tools are practised; one, dry grinding on a dry stone, the other, wet grinding on a stone moistened with water. Many articles, as scissors, razors, and penknives, are ground partly on dry stone and partly on the wet stone. Others, as forks and needles, are ground mostly on a dry stone. Table knives are ground principally on a wet stone. Saws, files, and scythes, are ground entirely on a wet stone. Dry grinding is most injurious, and tends most directly and effectually to induce bronchial and pulmonary disease, and thereby to abridge the duration of life amongst the grinders. The dry grinders, therefore, are most speedily destroyed. The life of the wet grinder is often prolonged to a considerable age.

Of 1,000 scissors-grinders above 20 years of age, only 20 attain the age of between 50 and 55 years; only 10 the age of between 51 and 65; and none live beyond the latter age; while of the inhabitants of Sheffield generally, 224 in 1,000 are found living at 65 and above, and in the midland counties 413 in 1,000. Of artisans in this branch 843 in 1,000 die under 45 years of age.

With the fork-grinders it is worse. Among 1,000 fork-grinders, aged above 20 years, not 1 attains the age of 59; while in Sheffield, among 1,000 persons, 155 are living at 59. Of these 1,000 persons, 472 die between 20 and 29 years, 410 between 30 and 39; and the residual 115 are all gone before the age of 50.

Among 1,000 razor-grinders above 20 years of age, 749 die under 41 years of age, the rest mostly between 41 and 60; between 61 and 65, only 5 are living; and after 65 all are gone.

Of the penknife-grinders, not 1 in 1,000 arrives at the age of 60; 731 die before the 40th year; and the rest are all destroyed before the 60th year.

Saw-grinders, file-grinders, and scythe-grinders, who work on the wet stone, are less liable to bronchial disease, and are longer lived. The numbers pursuing saw-grinding are not great. Yet among seventy-eight persons engaged in it in 1843, nine were between sixty and sixty-five, and one died between sixty-six and seventy, and one at seventy-nine.

The number of scythe-grinders is also not great. In 1843, there were thirty; of these, eight were between forty-one and sixty years of age. Both the saw-grinders and the scythe-grinders are exposed to accidents, sometimes fatal, from the breaking of the stone.

The lesions which produce this great mortality are of a complicated character. The most common lesions are chronic inflammation, with thickening of the bronchial membrane, enlargement or dilatation of the bronchial tubes, emphysema, and expansion of the pulmonary tissue.

The bronchial glands are enlarged, or converted into a black, hard, gritty substance, varying in size from half a marble to a large hazelnut. In dividing these glands, the sound emitted is the same as if the scalpel were dividing a soft stone, and the section is black and polished, and grates over the edge of the knife. Such masses are commonly detected in grinders who have belonged to the most destructive branches. Similar soft, sectile, gritty, or stony matter is found in almost every part of the lungs, in portions varying from the size of a currant to that of a bean; adhesions between the pulmonary and costal pleura are also frequent. In some instances the lungs present an appearance as if black currants had been distributed through their whole substance, and accompanied with similar bodies, larger in size, but hard and gritty like them. These currant-like bodies are also observed on the surface of the lungs. They are supposed to consist of the dilated extremities of veins containing some of the solid constituents of the blood.

Tubercles are also occasionally found, with their consequences, vomicæ.

Another state, frequently observed, is engorgement or infiltration of the lungs with a dark coloured fluid, which is ascribed to the inhalation of the fine black dust floating in the atmosphere during the operation of glazing.

On the mode of production of these lesions, or the order of their succession, observers are not agreed.

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22. *Fungus Hæmatodes of the Brain.*—Mr. Prankerd relates (*Prov. Med. and Surg. Journ.*, Sept. 20th, 1848) a case of fungus hæmatodes of the brain which is remarkable for the little disturbance in the functions of the brain which it occasioned.

The subject of it was a woman forty-four years of age, married, menstruated regularly, and mother of several children, for the last ten years of her life suffered from intense pain in the head, occurring at intervals, and for nearly the whole of this time (nine out of the ten years), was completely blind. For the last few years, her health was evidently affected by the continued suffering she endured. Latterly, counter-irritation, such as setons, issues, and the long issue through the scalp, were principally relied on, but afforded only temporary relief, and she was gradually worn down by the suffering, and ultimately sank, exhausted. Throughout the whole period her mental powers were unimpaired; she was very conversible and intelligent, and her symptoms were not such as would indicate that much structural disease of the brain existed.

Autopsy, eight hours after death.—The head only was examined. The right hemisphere of the brain was healthy: the *left* rather softened, and the anterior and inferior portion was occupied by a firm tumour, weighing upwards of eight ounces, of an oval shape, and occupying more space than a cricket ball. In appearance it was of a dark purple colour, and in structure lobulated. The optic nerve was found extremely small, having suffered gradual compression during the increase of the tumour.

The tumour was examined by Mr. Bowman of King's College, who pronounced it to be a decidedly fungoid growth. In some portions the blood-vessels had given way, constituting fungus hæmatodes, and other parts presented the character of medullary sarcoma. A section examined under the microscope presented a